



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,054	12/02/2003	David Johnston	884.B57US1	2615

21186 7590 08/25/2006

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

SMITH, SHEILA B

ART UNIT PAPER NUMBER

2617

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/726,054

Applicant(s)

JOHNSTON, DAVID

Examiner

Sheila B. Smith

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-23 rejected under 35 U.S.C. 102(e) as being anticipated by Raghavan et al. (U.S. Patent Publication Number 2003/0134607).

Regarding claim 1, Raghavan et al. discloses essentially all the claimed invention as set fourth in the instant application, further Raghavan et al. discloses multi-channel transceiver system. In addition Raghavan et al. discloses a method, comprising: coupling a plurality of receivers to a first frequency reference to communicate with a first station over a corresponding plurality of signal paths (which reads on paragraph 0026); and selectively coupling one of the plurality of receivers to a second frequency reference to communicate with a second station over a signal path not included in the plurality of signal paths (which reads on paragraph 0122).

Regarding claim 2, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses determining whether a quality of service provided by the second station is greater than a quality of service provided by the first station (paragraph 0026).

Regarding claim 3, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses the quality of service provided by the first station includes at least one of a network type, a network capability, a network activity level, a signal strength, a bandwidth, a signal-to-noise ratio, a signal-to-interference ratio, a multipath condition, a service provider, a monetary cost, user-preferred information, and a user-preferred service (paragraph 0026).

Regarding claim 4, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses adjusting the first frequency reference to provide a reference frequency substantially equal to a reference frequency provided by the second frequency reference (paragraph 0026).

Regarding claim 5, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses handing off communications between the first station and the plurality of receivers from the first station to the second station after determining that a quality of service provided by the second station is greater than a quality of service provided by the first station (paragraph 0026).

Regarding claim 6, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses selectively coupling another one of the plurality of receivers to a third frequency reference to communicate with a third

station over another signal path not included in the plurality of signal paths (paragraph 0026).

Regarding claim 7, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses adjusting the second frequency reference to provide a new reference frequency; and communicating with a new station using a new signal path not included in the plurality of signal paths (paragraph 0026).

Regarding claim 8, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a machine-accessible medium having associated data, wherein the data, when accessed, results in a machine performing: coupling a plurality of receivers to a first frequency reference to communicate with a first station over a corresponding plurality of signal paths (paragraph 0026); and selectively coupling one of the plurality of receivers to a second frequency reference to communicate with a second station over a signal path not included in the plurality of signal paths (paragraph 0122).

Regarding claim 9, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses the plurality of receivers are configured to operate as a multiple-input, multiple-output system, and wherein selectively coupling one of the plurality of receivers to the second frequency reference further comprises: decoupling the one of the plurality of receivers from operating as a

part of the multiple-input, multiple-output system; and coupling the one of the plurality of receivers to operate as a receiver independent from the multiple-input, multiple-output system (paragraph 0026).

Regarding claim 10, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses the data, when accessed, results in the machine performing: selecting a second reference frequency to be provided by the second frequency reference based on one of an arbitrary scan process, a list of frequencies, and a location of the plurality of receivers (paragraph 0026).

Regarding claim 11, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a first reference frequency to be provided by the first frequency reference is selected in accordance with a channel designated by one of an Institute of Electrical and Electronics Engineers (IEEE) 802.11 standard or an IEEE 802.16 standard (paragraph 0026).

Regarding claim 12, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a selected one of the plurality of receivers is included in a transceiver (paragraph 0026).

Regarding claim 13, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses an apparatus, comprising: a

plurality of receivers to couple to a first frequency reference and to communicate with a first station using a plurality of signal paths, wherein at least one of the plurality of receivers can be selectively coupled to the first frequency reference or to a second frequency reference to communicate with a second station using a signal path not included in the plurality of signal paths (paragraph 0026).

Regarding claim 14, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses the plurality of signal paths comprise a portion of a multiple-input, multiple-output communication system (paragraph 0026).

Regarding claim 15, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses the first frequency reference comprises a first frequency synthesizer, and wherein the second frequency reference comprises a second frequency synthesizer (paragraph 0026).

Regarding claim 16, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a determination module to determine whether a quality of service provided by the second station is greater than a quality of service provided by the first station (paragraph 0026).

Regarding claim 17, Raghavan et al. discloses everything claimed, as applied above

(see claim 1) additionally, Raghavan et al. discloses the quality of service provided by the first station includes at least one of a network type, a network capability, a network activity level, a signal strength, a bandwidth, a signal-to-noise ratio, a signal-to-interference ratio, a multipath condition, a service provider, a monetary cost, user-preferred information, and a user-preferred service (paragraph 0026).

Regarding claim 18, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a third frequency reference, wherein at least another one of the plurality of receivers can be selectively coupled to the first frequency reference or the third frequency reference to communicate with a third station using another signal path not included in the plurality of signal paths (paragraph 0026).

Regarding claim 19, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses the plurality of signal paths comprise a portion of a multiple-input, multiple-output communication system, and wherein the signal path is a search signal path, further comprising: a third frequency reference (paragraph 0026), wherein at least another one of the plurality of receivers can be selectively coupled to the first frequency reference or the third frequency reference to communicate with a third station using a second search signal path not included in the plurality of signal paths (paragraph 0122).

Regarding claim 20, Raghavan et al. discloses everything claimed, as applied above additionally, Raghavan et al. discloses a plurality of receivers to couple to a first frequency reference and to communicate with a first station using a plurality of signal paths, wherein at least one of the plurality of receivers can be selectively coupled to the first frequency reference or to a second frequency reference to communicate with a second station using a signal path not included in the plurality of signal paths (paragraph 0026); a processor to couple to the plurality of receivers; and a display to couple to the processor (paragraph 0122).

Regarding claim 21, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a transceiver including a selected one of the plurality of receivers (paragraph 0026).

Regarding claim 22, Raghavan et al. discloses everything claimed, as applied above (see claim 1) additionally, Raghavan et al. discloses a third frequency reference, wherein at least another one of the plurality of receivers can be selectively coupled to the first frequency reference or to the third frequency reference to communicate with a third station using another signal path not included in the plurality of signal paths (paragraph 0026).

Regarding claim 23, Raghavan et al. discloses everything claimed, as applied above

(see claim 1) additionally, Raghavan et al. discloses a one-to-one corresponding plurality of antennas to couple to the plurality of receivers (paragraph 0026).

Response to Arguments

2. Applicant's arguments filed 06/08/6 have been fully considered but they are not persuasive. Regarding applicants arguments that the Office Action, it is asserted that Raghavan discloses coupling a plurality of receivers to a first frequency reference to communicate with a first station over a corresponding plurality of signal paths (which reads on paragraph 0026),. and selectively coupling one of the plurality of receivers to a second frequency reference to communicate with a second station over a signal path not included in the plurality of signal paths (which reads on paragraph 0122)." However, a careful reading of Raghavan reveals that this assertion is incorrect. This conclusion may be better understood by considering the reference in more detail. The examiner contends that Raghavan discloses that limitation as disclosed in paragraph 0026" A transmission system in accordance with the present invention can include a plurality of receivers and a cross-channel interference canceller coupled to each of the receivers for receiving signals from the high frequency channels. Each of the plurality of receivers receives signals from one of a plurality of transmission bands. One receiver receives signals from the base band channel and the remaining receive signals from higher frequency channels". And " In some embodiments, at least one of the plurality of receivers that receives signals from a higher frequency channel includes a down converter that converts an input signal from: the one of the plurality of transmission bands to a base band. A filter coupled to receive signals from the

Art Unit: 2617

down converter can substantially filter out signals not in the base band after down-conversion.

Further, an analog-to-digital converter coupled to receive signals from the filter and generate

digitized signals and an equalizer coupled to receive the digitized signals can be included. In

some embodiments, a trellis decoder coupled to receive signals from the equalizer and generate

recreated data, the recreated data being substantially the same data transmitted by a

corresponding transmitter. In some embodiments, a cross-channel interference canceller can be

coupled to receive output signals from each of the equalizers and to provide signals to a digital

filter or the trellis decoder.”

The examiner standby and restates the above rejection.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2617

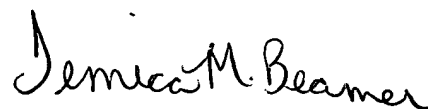
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheila B. Smith whose telephone number is (571)272-7847. The examiner can normally be reached on Monday-Thursday 6:00 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.Smith 

August 21, 2006



TEMICA BEAMER
PRIMARY EXAMINER